LONG-TERM ENVIRONMENTAL STEWARDSHIP BASELINE GUIDE

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U.S. Department of Energy
National Nuclear Security Administration Service Center
Environmental Programs Department

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CONTENTS

Acronyms

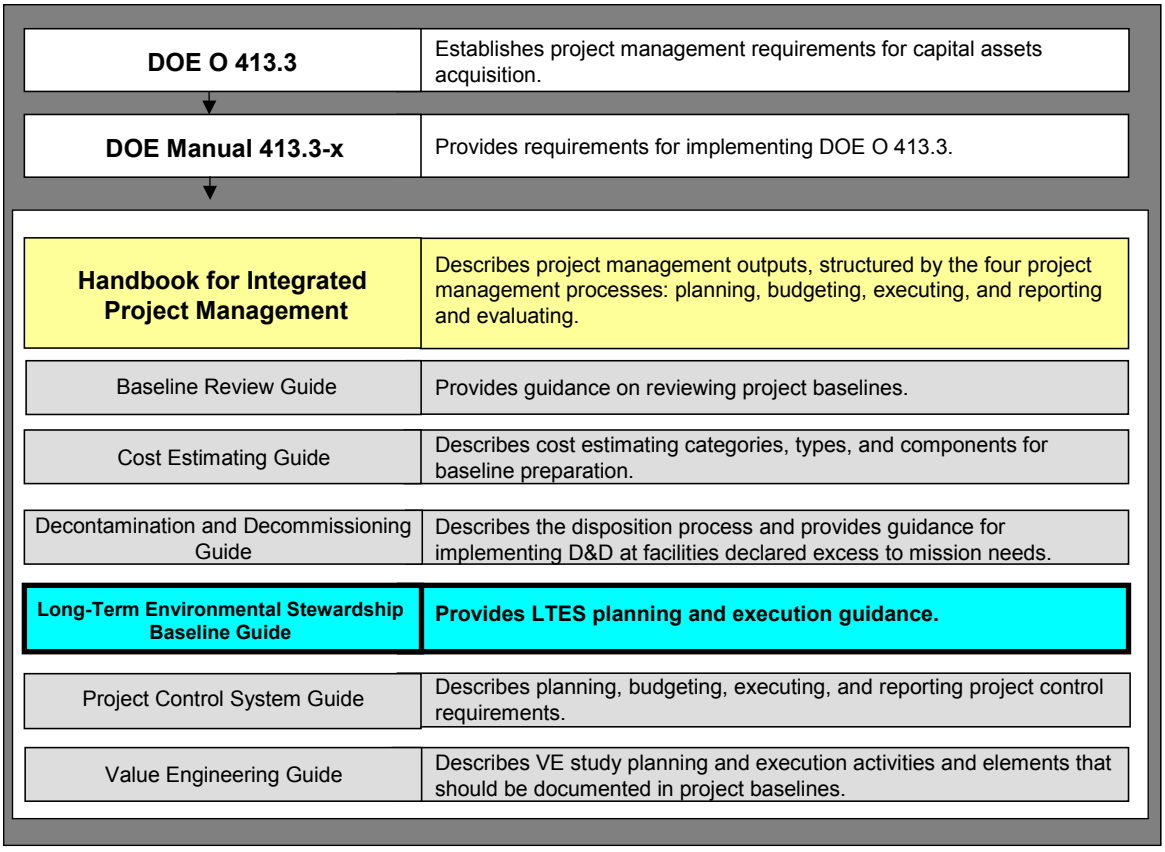
CERCLA	Comprehensive Environmental Restoration, Compensation, and Liability Act
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
EM	Office of Environmental Management
EP	Environmental Programs Department
ER	environmental restoration
Guide	Long-Term Environmental Stewardship Baseline Guide
HQ	DOE Headquarters
HSWA	Hazardous and Solid Waste Amendments of 1984
IPABS	Integrated Planning, Accounting, and Budgeting System
IPABS-IS PEM	IPABS-Information System Program Execution Module
KCP	Kansas City Plant
LANL	Los Alamos National Laboratory
LTES	Long-Term Environmental Stewardship
M&O	management and operations
MOA	memorandum of agreement
NFA	No Further Action
NNSA	National Nuclear Security Administration
NRDA	Natural Resource Damage Assessments
PARS	Project Assessment and Reporting System
PCT Plan	Project Closure and Transition Plan
PRS	potential release site
PSO	Principal Secretarial Offices
RCRA	Resource Conservation and Recovery Act
SNL	Sandia National Laboratories
SNL/NM	Sandia National Laboratories/New Mexico
TL	Task Leader
WBS	work breakdown structure

Preface

The National Nuclear Security Agency Service Center Environmental Programs Department provides information and guidance to site personnel for documenting and maintaining project life-cycle baselines. Within this guidance hierarchy, the *Handbook for Integrated Project Management* provides an overview of project management and baseline guidance based on DOE O 413.3, Program and Project Management for the Acquisition of Capital Assets and describes required planning, budgeting, executing, and reporting outputs. Topic-specific project management guides have been developed that further facilitates implementing DOE O 413.3 and are shown in Figure 1.

These documents were developed to provide guidance for environmental restoration, waste management, and budgeting personnel who have project management responsibilities. Additionally they are intended to provide site offices and site contractors with an understanding of the project management planning, budgeting, executing, and reporting processes and processes associated with baseline reviews, cost estimating, project control systems, decontamination and decommissioning, long-term environmental stewardship, and value engineering.

The figure below briefly describes the handbook and guides. Environmental Programs Department personnel with project management responsibilities maintain these documents. Check http://www.doeal.gov/erd/policy_and_guidance.htm to ensure you are using the current version.



Project Management Guidance Document Framework

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1.0 INTRODUCTION

The U.S. Department of Energy (DOE) National Nuclear Security Administration (NNSA) Service Center Environmental Programs Department (EP) *Long-Term Environmental Stewardship Strategic Plan* defines long-term environmental stewardship (LTES) as *"... the proactive management toward sustainable use and protection of natural and cultural resources affected by DOE AL operations and operational legacies*" (DOE, 2002a). It includes activities ensuring protection of human health and the environment following Environmental Restoration (ER) Project closure. As ER projects move toward completion, planning, integrating, and documenting LTES activities is increasingly important to help ensure smooth transition from the ER Project to LTES.

The purpose of this document is to provide guidance for properly documenting LTES planning and execution into ER Project life-cycle baselines (baselines). It is not intended that LTES planning should be immediately and entirely incorporated into baselines; a phased approach over several change cycles to fully integrate LTES into the life-cycle baselines may be required. Sites' LTES requirements will vary greatly. Due to the range of LTES activities anticipated at a site and the magnitude of information required in baselines, site offices are encouraged to use a graded approach to integrate LTES planning into ER Project closure and transition. Therefore, this *LTES Baseline Guide (Guide)* is intended to provide flexibility in addressing LTES in baselines, while also clearly identifying requirements. However, the standard project management and baseline development protocol should be followed.

1.1 LTES Background

In December 2000, Deputy Secretary of Energy T.J. Glauthier signed a policy regarding transferring LTES work to the landlord at Office of Environmental Management (EM) environmental restoration, decontamination, and decommissioning mission end (Glauthier, 2000). The draft *Long-Term Environmental Stewardship Strategic Plan* (DOE, 2002a) contains long-term stewardship principles, goals, and objectives and both programmatic and site-specific planning assumptions. Strategic plan implementation is accomplished by incorporating LTES principles and objectives into planning and operations activities, either through site-specific LTES plans or other existing planning efforts and baseline scope, cost, and schedule documentation. This *Guide* outlines requirements for integrating LTES into baseline documentation, based on site-specific planning.

1.2 Roles and Responsibilities

Organizational roles and responsibilities unique to LTES are:

- DOE Headquarters (HQ)
  - EM is responsible for national EM program planning and budgeting, negotiating the LTES Memorandum of Agreement (MOA), preparing complex-wide policies and procedures, and evaluating performance on a national level.
  - NNSA, as site landlord, is responsible for LTES after sites transfer from EM, for negotiating the MOA, and for integrating EM LTES requirements into site-wide management approaches. NNSA must ensure that LTES is executed in an efficient manner and is protective of human health and the environment.
- NNSA Service Center EP is responsible for preparing policy and guidance for Los Alamos National Laboratory (LANL), Sandia National Laboratories (SNL), Pantex Plant, the Kansas City Plant (KCP), and the Inhalation Toxicology Laboratory, recommending performance criteria, and evaluating performance. ERD also provides integration between the projects, other sites and HQ; HQ advocacy; site office technical and programmatic support, and, assists with budget development.

- Site Offices – Site offices overseeing LANL, SNL, Pantex Plant, and KCP will be responsible for LTES management, negotiating and evaluating performance measures, and incorporating LTES into management and operations (M&O) contracts. NNSA Service Center Site Offices (as of February 2003) are shown on the right.
- Contractors – M&O contractors for the sites are responsible for executing LTES pursuant to landlord and EM requirements.
- Others –Other parties with a vested interest in LTES, including regulators, stakeholders, and other site tenants and lessees will have various responsibilities that might include participating in advisory boards, providing land use planning input, and negotiating legal agreements.

2.0 DOCUMENTING LTES PLANNING ACTIVITIES IN THE BASELINE

Baseline documentation must include separately tracked and managed project scope descriptions, costs, and schedules for LTES. This separate tracking allows DOE to roll-up and anticipate the resources necessary for LTES. Primary baseline planning activities include:

- Documenting ER Project closure activities and transition including preparing a Project Closure and Transition (PCT) Plan
- Defining LTES and the LTES Plan
- Identifying LTES activities during the ER Project Phase
- Identifying LTES-phase activities, milestones, and life-cycle funding requirements.

LTES will be integrated into existing baselines, and will eventually transition into stand-alone LTES baselines. ER Project and LTES Phase baseline requirements are described in Section 3.0. Figure 2.1 presents a generic timeline for ER Project completion and LTES work.

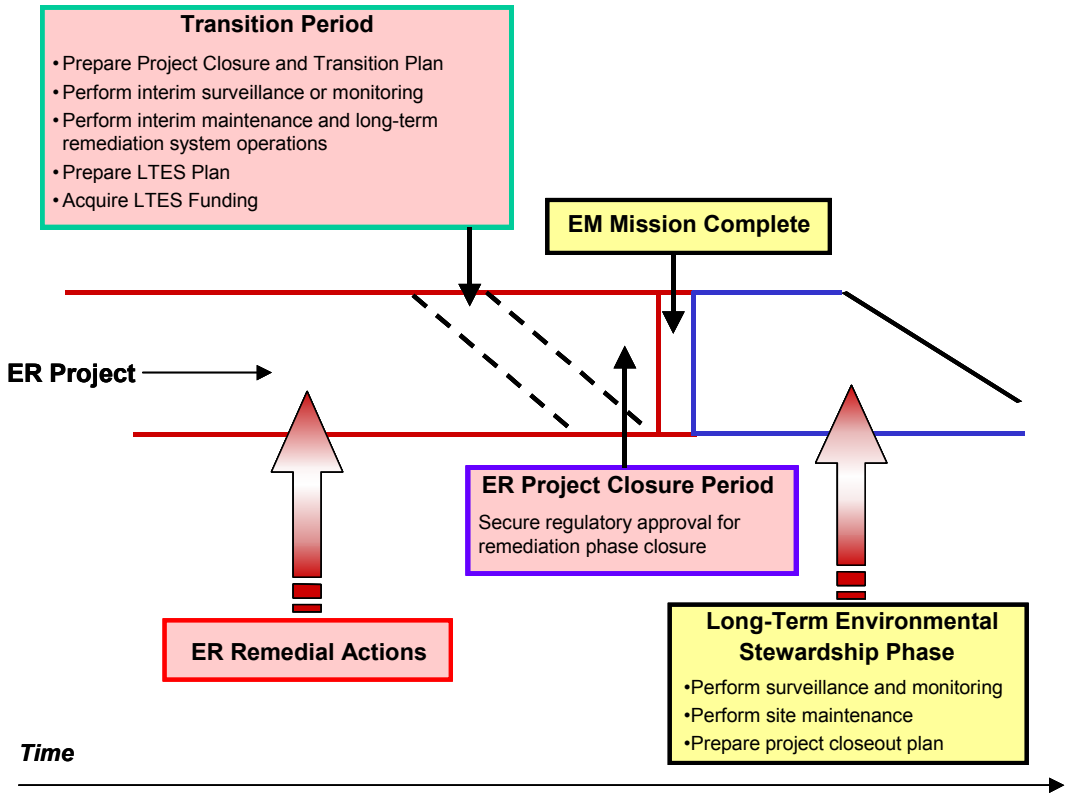

Figure 2.1. ER and LTES Phases

The *Integrated Planning, Accounting, and Budgeting System (IPABS) Handbook* (DOE, 2002b) contains generic, nonspecific site guidance for preparing the LTES portion of baselines. EM developed the *Long-Term Stewardship Plan Guidance for the Closure Sites* (DOE, 2002c) and is planning to develop guidance for other sites.

2.1 PCT Plan and LTES Plan Preparation

ER Project planning includes preparing a Project Closure and Transition Plan (PCT Plan) and an LTES Plan during the transition period (Figure 2.1). The ER Project baseline must include the scope, cost, and schedule for all activities associated with preparing the PCT Plan, LTES Plan, and any other document affecting transition to LTES. If these plans have not been prepared, the scope, cost, and schedule for preparing them should be included in the baseline. Sites have flexibility regarding integration of LTES planning and LTES-phase activities into the work breakdown structure (WBS).

2.1.1 PCT Plan– Documenting ER Project Closure and Transition

During the transition period, both ER and LTES activities take place. The PCT Plan is an internal document developed by the ER Project to ensure systematic, efficient, and complete ER Project closure. It states the necessary actions to administratively close-out the ER Project as required to meet RCRA/Hazardous and Solid Waste Amendments of 1984 (HSWA), Department of Energy (DOE), and site requirements. It also describes what responsibilities will be transferred to the landlord.

The PCT Plan also describes the process of transferring a project from ER to the entity responsible for LTES. Appendix A includes an example PCT Plan outline and associated checklists.

2.1.2 Defining LTES – The LTES Plan

The LTES plan is a public document that describes activities that will take place during LTES. It is the primary document describing LTES implementation. For this reason, the LTES Plan must be developed with stakeholder involvement to ensure that it represents realistic plans that have been agreed upon by the stakeholders. The LTES Plan must also be prepared in coordination with personnel who will be responsible for LTES implementation.

LTES Plans should be prepared before site closure, during the transition period (Figure 2.1). This document can be a summary level document if adequate elements of LTES are described in other documents. However, these other documents must be cited (rather than reiterated) and be reasonably retrievable. Health and safety, quality assurance, stakeholder involvement, emergency response, and other pertinent plans should be reviewed and modified, if necessary, to meet LTES requirements.

LTES plans must describe long-term environmental stewardship requirements at specified sites and list primary assumptions and risks. Regulatory acceptance documentation and a summary site status describing remedies and remaining hazards, risk assessment results, and performance criteria and limitations should be completed and included in the LTES Plan. Appendix B includes LTES Plan minimum requirements and an example outline.

2.2 Transitioning LTES Work

Secretarial policy regarding transition has not been finalized. However, the following sections assume transition to the landlord will occur. LTES baseline guidance documentation will be updated according to policy changes.

Transitioning LTES responsibilities to the landlord will require early and frequent ER Project personnel and landlord interaction. Scope, cost, and schedule for activities related to transition should be clearly documented in the baseline. Work elements related to transition are included in the following sections.

2.2.1 PLANNING FOR TRANSFER

Current project baselines are used to determine planning for transfer to the LTES Phase. An MOA must be developed to transfer LTES activities from EM, including the steps and conditions necessary for project turnover. The MOA is an EM and NNSA HQ agreement. It identifies organizations responsible for conducting LTES activities and documents amounts and timing of funds transfer. ER Project personnel will be expected to support development of the MOA. Guidance for developing the MOA and obtaining approval will be forthcoming. An MOA template is included in Appendix C.

2.2.2 LTES PLAN INTEGRATION

Landlord staff should be involved during development of the LTES Plan to ensure compatibility and acceptance of the document. ER Project and landlord personnel should ensure that the LTES Plan and supporting documentation are integrated into the landlord's policies, procedures, and the Site-Wide Integrated Safety Management Plan, as applicable. Additional information about safety management and authorization basis can be found at http://www.doeal.gov/laaoabt/internet/GenInfo.htm .

2.2.3 INFORMATION MANAGEMENT

Activities for transitioning and integrating information and records management into landlord information management systems should be included in ER Project baselines, including records management required for LTES planning efforts. ER Project information such as PCT Plan-related archives, active files, and real estate data must be accessible for integration into landlord policies and procedures and the Site-Wide Integrated Safety Management Plan.

2.2.4 PERMITTING ISSUES

Activities related to permitting such as corrective action closeout, post-closure permits, state requirements, and other regulatory activities should be included in the ER Project baseline as part of LTES planning. ER Project personnel should communicate with the landlord and regulators, as appropriate, to ensure that regulatory requirements and authorities are understood and clearly identified and documented. The PCT Plan should provide information on permit requirements and status.

2.2.5 PROGRAMMATIC RISKS AND VULNERABILITIES

Programmatic risks and vulnerabilities such as remedy failure, federal tort liability, and other risks could significantly affect scope, schedule, and/or LTES costs. ER and landlord personnel should identify and quantify programmatic risks in the Programmatic Assumptions Document. Programmatic risk examples include:

- Active sites – Potential release sites (PRSs) that cannot be remediated because they are in current usage. In order to define baseline scope, active sites are not included in ER site baselines. Active sites are a programmatic risk because they must be remediated as they become inactive, posing a landlord management responsibility.
- Excess facilities – Process contaminated facilities that become excess after ER Project completion may be a landlord responsibility.

- Ongoing Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA) issues – Several aspects of CERCLA could affect LTES cost and schedule, including Natural Resource Damage Assessment (NRDA) liability. CERCLA liability may also occur if waste management facilities used by become Superfund sites, or have otherwise damaged natural resources.
- Newly identified PRSs – Landlords may be responsible for PRSs identified after ER Project closeout.

2.2.6 ALTERNATIVE LESSEES, TENANTS, AND STAKEHOLDERS

ER Project personnel should coordinate with the landlord on issues affecting lessees, tenants, and stakeholders. The ER Project baseline should include scope, cost, and schedule for joint ER and landlord plans considering potential issues with alternative lessees, tenants, or third parties that might have a vested interest or could be affected by transition or LTES activities. For example, SNL/NM maintains facilities and test sites on lands permitted by the U.S. Air Force and the U.S. Forest Service for use by DOE. Transition planning must include involvement and input from all such stakeholders.

2.2.7 BUDGET TRANSFER

Sites LTES budgets will be transferred from EM to NNSA after EM mission is complete and NNSA and EM have agreed to transfer LTES responsibilities. The LTES cost estimates contained in the approved EM baselines are placed in the EM budget using the IPABS database. LTES estimated costs are used to determine the amount of funds to be transferred to NNSA when the EM project is complete. The transfer of funds needs to be planned two years in advance of the completion of the EM mission to ensure LTES funding is covered.

2.2.8 PUBLIC INVOLVEMENT

Public involvement will be necessary during LTES. ER Project personnel should coordinate with the landlord on transition of public participation plans and public involvement issues such as disseminating information to the public, public meetings, and reasonable public access to unclassified documents.

2.3 Determining and Documenting LTES Phase Activities During the ER Project Phase

As PRSs are remediated and closed, they are transitioned to LTES. The period during which PRSs move from the ER Project to LTES is identified in Figure 2.1 as the Transition Period. Sites should identify Transition Period LTES activities in the baseline WBS, including preparing the LTES Plan and PCT Plan and conducting site maintenance and interim surveillance and monitoring activities such as:

- Monitoring of landfills (e.g., ground water, methane)
- Maintenance of restricted use-area fencing
- Monitoring of groundwater related to a specific PRS or engineered system.

Scope, cost, and schedule for LTES activities with regulatory-approved final decision should be included in ER project baselines. Activities not included as LTES in baselines include site-wide ground water remediation that does not have regulatory approval and interim remedies.

The ER Project baselines also should include options for project turnover. Project turnover requires understanding many complex issues, including engineering system requirements and performance

evaluation, institutional controls, funding issues, and land use. Documentation must be complete, controls in place, and systems operating according to regulatory and technical requirements prior to transfer to the landlord. Phasing enables turnover before agreeing on all the issues and provides the landlord opportunity to prepare for future LTES activities gradually. Phasing can include transferring LTES activities at specific PRSs, geographic areas, or functional groups, while the ER Project maintains control of other ER activities. For example, ER projects could transfer specific PRS, geographic area, or functional group LTES activities before completing the entire project, while maintaining control of other ER activities.

2.4 Milestones

The ER project baseline schedule should present LTES start dates, end dates, duration of significant planning and LTES-phase activities, and milestones. Mandatory LTES milestones are checked (✓) among the following milestone examples:

Requirement	Milestone
✓	ER Project completion date
✓	Estimated MOA completion date
✓	LTES Plan completion
	DOE approval of final radioactive-contaminated only site
✓	Submittal of final closure documentation to the regulatory authority
✓	Regulatory authority approval of the final closure document (e.g., the final permit modification request, Corrective Measure Implementation Report, or final No Further Action Report)
	Date of Resource Conservation and Recovery Act (RCRA) post-closure permit issuance, for sites under RCRA 40 CFR 265, Part G
✓	Estimated EM mission completion (same as LTES start date)
	Dates of active remediation system shut-down and transition to monitoring and/or closure
✓	Estimated LTES completion date.

Milestones will be unique to each ER project, depending on site closure definitions, applicable regulatory requirements, and specific site features and contaminants of concern.

2.5 Lifecycle Funding Needs

Sites must develop and annually update a funding estimate for LTES annual and lifecycle costs. Guidance concerning the number of years to consider in estimating lifecycle costs varies; however, when possible for planning purposes, sites should use known lifecycle periods supported by backup documentation. When the LTES lifecycle is not known, a 70-year planning window is recommended. Sites estimating LTES to extend more than 70 years should document duration expectations in appropriate technical summary documents.

Sites may consider planning in terms of the 30-year RCRA post-closure monitoring period. However, monitoring does not necessarily end at the end of 30 years if contaminants are still present in the monitored media. Thus, the 70-year period is intended to prevent stakeholder concerns that monitoring could be terminated after 30 years, regardless of remaining risk.

3.0 LTES-PHASE BASELINE GUIDANCE

This section provides guidance for incorporating LTES requirements into program or project life cycle baselines.

3.1 Work Breakdown Structure (WBS) Development

Sites must develop an appropriate LTES WBS. A national DOE-mandated LTES WBS does not currently exist, but Appendix D includes an example WBS and list of typical LTES activities and major elements that should be described in the baseline. Sites are unique, both in project maturity and complexity. However, the template should be evaluated and useful components incorporated in baselines. The WBS outline also is useful for presenting and reporting LTES baseline requirements. WBS levels 5 through 9 are directly related to LTES and described in this document and Appendix D. WBS levels 1 through 4 are not described because they are not specific to LTES. WBS levels 1 and 2 identify EM HQ and the specific EM HQ program (i.e., ER), Level 3 indicates that the work is done in either a plant or a laboratory, and Level 4 identifies a specific plant or laboratory. A WBS Level 5 LTES number is assigned for each site (see Appendix D example).

Site offices are strongly encouraged to estimate LTES activities to at least Level 6. This practice will allow for consistency with the ER portion of the baseline and permit reviewers to see the breakout of work and validate the estimates.

LTES work has many activities in common with other ER project tasks, including project management, program and technical support, land use planning, monitoring and maintenance, scheduling, risk quantification and management, and cost estimating. This *Guide* generally follows the example WBS template in Appendix D, which also includes graphics illustrating the WBS structure.

The following sections provide ER baseline guidance associated with LTES-specific issues or activities. Required activities also are indicated in **bold** in Appendix D. Specific guidance does not exist for all of the WBS levels and activities indicated in the template, but in most cases, guidance is provided for WBS levels 6 and 7. Some WBS Levels 8 and 9 activities also are addressed.

3.1.1 PROJECT MANAGEMENT

Project management baseline requirements are contained in the *Project Control System Guide*.

3.1.2 TECHNICAL MANAGEMENT AND SUPPORT

This section describes general baseline technical management and support requirements. Areas specific to LTES that could be included in the LTES portion of baselines are:

3.1.2.1 Technical Evaluations

Appropriate technical evaluations must be performed during LTES to optimize opportunities and minimize schedule and costs. Evaluations are conducted for engineered system performance reviews, new technologies, integrating technologies, formal program reviews, and site-wide strategic planning. System performance reviews must be conducted and options developed to correct deficiencies, as necessary. Costs associated with performing formal reviews should be included in baselines.

LTES work will be dynamic and it is expected that closure strategies, identification of additional corrective action sites, and other closure-related issues will have an impact on LTES baselines.

Site-wide strategic planning options will be considered through ongoing evaluations and new technologies will be evaluated to identify potential applications at post-closure sites.

3.1.2.2 Regulatory Support

LTES regulatory support costs included in baseline documentation will depend on the post-closure regulatory framework. Discussions with regulators regarding framework should begin well in advance of LTES, to ensure adequate planning. Examples of regulatory support activities include:

- Routine scheduled meetings
- Preparing position papers on issues that could adversely affect the LTES-phase of work
- Discussions and negotiations with regulatory personnel on emerging issues, strategies, and LTES closure.
- Maintaining and updating permits
- Preparing reports for regulatory agencies

The following websites provide information about potentially applicable Federal and DOE requirements. State and local requirements should also be researched.

- http://lts.apps.em.doe.gov/center/reports/pdf/overview_statutes_regs.pdf
  Major Environmental Statutes, Regulations, and Executive Orders for Long-Term Stewardship at DOE sites
- http://lts.apps.em.doe.gov/center/reports/pdf/DOE_Orders_Policies_Table.pdf
  Overview of DOE Order and Policy directives relevant to long-term stewardship

3.1.2.3 Risk Assessment and Evaluation

Baseline documentation also may need to include post-ER closure risk assessment activities such as:

- Evaluating the risk knowledge based on changes of facility operations, site-wide environmental issues, or unexpected conditions
- Monitoring and evaluating sites' engineered systems performance during LTES and modifying systems or implementing alternate strategies when necessary.
- Assessing human health and ecological risks associated with site performance and land use changes.

3.1.2.4 Information Management

Information management activities documented in LTES baselines should include activities such as:

- Implementing and maintaining long term storage and retrieval of electronic and hard copy data, reports, correspondence
- Preparing and delivering internal project communications
- Designing and maintaining websites
- Maintaining accessibility to information by public, regulators, and others.

3.1.2.5 Stakeholder Involvement

Planning and implementing LTES will require effective comprehensive stakeholder programs. This will include communication with the public, other tenants and site owners, and related parties. Activities that might be part of baseline documentation include:

- Planning and holding public meetings
- Preparing and distributing brochures, reports, updates, and other information
- Preparing official public notices for significant events or decisions.

3.1.3 LAND USE AND INSTITUTIONAL CONTROLS

Institutional controls are legal or administrative means of limiting access to, or warning of hazards associated with, a property. Land use plan modifications, engineered remediation systems, resource management issues, or newly identified contaminated sites determine or affect institutional controls identified and documented in baselines. The ER Project should integrate LTES issues and land use planning, including periodic reviews to ensure continuing validity of current institutional controls.

3.1.4 SITE WIDE ENVIRONMENTAL MONITORING AND PHYSICAL CONTROLS

LTES activities not related to specific PRSs should be included in the LTES portion of baselines. Non-site specific post-closure environmental monitoring can be incorporated into the baseline by media type and should include a section describing physical controls, as appropriate. Media monitored during LTES could include groundwater, surface water, soils and sediments, and biota.

The organization of scope descriptions and associated resource sheets for monitoring activities will depend on the volume and complexity of work. However, the scope should be clearly defined and integrated into the landlord site-wide monitoring plan, including costs and schedules defending the scope and establishing end dates.

3.1.5 PRSS WITH ENGINEERED, SIGNED, AND/OR FENCED UNITS

Physical controls include barriers, fences, engineered systems, locked gates, or patrols used to protect human health and the environment. Sites with PRSs that require physical controls should be identified in the LTES portion of baselines through scope descriptions and resource sheets. The Appendix D WBS template distinguishes these PRSs according to the following Level 7 divisions:

- Signed and fenced units
- Engineered units.

Signed and fenced units consist of structural controls and sometimes security controls. These units are typically associated with sites that contain regulated substances above background or unrestricted use levels in surface or near surface soils, or sites that present a physical hazard. Examples include:

- Fencing restricting access at testing areas containing depleted uranium fragments from ordinance detonation or firing sites containing residual lead or other heavy metal fragments; associated sign to post warnings
- Fencing around mineshafts, adits, and pits to restrict access; associated sign to post warnings.

Controls providing protection from hazards present in surface or near surface soils that may or may not be implemented in conjunction with fenced units include:

- Native soil or vegetative covers to minimize erosion and infiltration of water through units with residual constituents of concern
- Berms to protect units from runoff and reduce erosion.

Units requiring structural controls are generally low maintenance sites and depending on complexity and quantity, can be grouped for baseline documentation purposes. LTES activities include:

- Monitoring and maintenance – ensuring that physical controls are in place and effective, and repairing damaged areas
- Surveys and object removal – performing visual, radiation, and other survey methods to evaluate the presence of hazards. Object removal, including removing uranium fragments revealed by natural weather processes, might be required occasionally to reduce hazards.

Engineered units contain engineered controls that detect, control, and/or contain contaminant migration or collect contaminants and can have monitoring systems to determine remedial system effectiveness. Generally, engineered units also have structural controls. Examples of engineered units include:

- Landfills with designed cover, caps, and or leachate collection and detection systems
- Contaminated areas with vadose zone extraction and monitoring systems
- Groundwater pump and treat systems to remove contaminants
- Other designed containment systems such as lined impoundments and barrier walls.

The scope of work required for monitoring and maintaining engineered unit systems can be significant. Thus, each engineered unit should have individual baseline scope descriptions, schedules, and resource sheets. LTES activities may include:

- Monitoring, and maintenance of engineered and structural controls
- Data management and reporting
- Evaluating system integrity.

3.2 Risk Management and Analysis

DOE O 413.3 and the *Project Controls System Guide* contain risk analysis requirements. Risk analysis includes risk management, and analysis of both programmatic (out-of-scope) risks and contingency (in-scope risks). Project risks should be listed in the baseline. These risks should be organized into two categories:

- Risks that might occur during LTES but do not affect the LTES portion of work
- Risks that might occur as a direct result of LTES activities and engineered or structural controls.

Work due to risks not affecting LTES work or not a result of LTES activities will not be funded through LTES. These risks should be identified in LTES baselines to make the landlord aware of potential project risks. Risks that might occur during the LTES-phase of work include:

- Active sites could become inactive, possibly requiring investigation and remediation work
- New sites might be identified that require mitigation
- Excess facilities might become inactive that require decommissioning and decontamination.

Risks that could affect LTES include:

- Unexpected system failures
- NRDA liability suits pursuant to CERCLA
- Regulatory changes affecting closure strategies or operations. (The long-term nature of LTES increases likelihood of regulatory changes.)
- New technologies that could eliminate risks or otherwise accelerate termination of LTES
- Changes in land use scenarios or conditions that affect closure.

Risks should be described in baseline documentation, including estimates of potential effects on scope, schedule, and cost. The scope, schedule, and cost to develop and maintain a Risk Management Plan also should be included in LTES baselines.

3.3 Schedule

Resource loaded project schedules are required for LTES work. Refer to *Project Control Systems Guide* for detailed guidance. The schedule must include milestones as described in Section 2.5 Milestones.

3.4 Cost Estimating

LTES activity-based cost estimates are required in baselines. Refer to *Cost Estimating Guide* for detailed guidance.

3.5 Performance Measures

EM and the landlord will negotiate performance measures. Performance measures are summarized in the *Handbook for Integrated Project Management.* Examples of potential LTES-related performance measures include:

- Meeting post-closure permit dates
- Reduction in number of PRSs requiring LTES.

4.0 PROJECT REPORTING

The scope, cost, and schedule for project reporting required during LTES must be considered in the baseline. Reporting requirements include updating IPABS-IS PEM, yearly updates and site monitoring and evaluation reports, and five-year reviews. Some reporting through the Project Assessment and Reporting System (PARS) may be appropriate, although most LTES activities will not require PARS reporting. Reporting in the Facility Information Management System also may become necessary.

4.1 IPABS-IS PEM

IPABS-IS PEM data and reporting requirements have changed annually. EM will notify sites of new or changed requirements and performance measures. Project baseline summary managers and site managers must be aware of these changes and provide timely input. The scope and cost of meeting IPABS-IS PEM reporting requirements should be presented in the baseline.

4.2 Periodic LTES Updates and Performance Reviews

Approved baselines are monitored for performance to determine if adjustments are necessary. Proposed changes are documented in baseline change proposals. The process for preparing baseline change proposals and making baseline changes is described in the *Project Control System Guide*. The baseline review process is described in the *Baseline Review Guide*.

Scope and cost of preparing baseline updates should be budgeted in the baseline. Baseline updates should include:

- Engineering system and site-wide monitoring data results and interpretation
- Physical controls and systems operation descriptions, including significant issues affecting performance.
- Significant changes in land use planning, institutional controls, and any other issue that could impact the baseline scope, schedule, or budget.
- An explanation of expectations and accomplishments for the next year.

LTES updates may also be necessary to:

- Ensure continued effectiveness of engineered and institutional controls
- Evaluate remedy controls to optimize maintenance and monitoring costs
- Minimize duplicative documentation.

5.0 REFERENCES AND RESOURCES

DOE G 1324.5B, Records Management Program, January 12. http://www.directives.doe.gov/cgi-bin/explhcgi?qry1639589768;doe-285

DOE Manual 413.3-X, *Manual for Program and Project Management for the Planning, Programming, Budgeting, and Acquisition of Capital Assets, (Program and Project Management Manual)*, to be issued. http://www.sc.doe.gov/sc-80/sc-81/man/intro.pdf or http://oecm.energy.gov/policies_guides/09-30-02NewDocumentSunday.PDF

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* This document will be, available on http://www.doeal.gov/erd/policy_and_guidance.htm and from the NNSA Service Center EP. It is anticipated that this document will be published as a final document in 2003.

6.0 GLOSSARY

active site – a potential release site that is not addressed in the ER Project baseline because of its continued use.

baseline –Environmental Restoration Project life-cycle baselines

EM mission completion – Per *FY2002 IPABS User's Manual,* Chapter 4, (DOE, 2002b)

> Mission complete indicates that the scope of the project has met the relevant criteria used for overall site completion (deactivation and decommissioning of all facilities have been completed, all releases to the environment have been cleaned up in accordance with agreed-upon cleanup standards, groundwater contamination has been contained or long-term treatment or monitoring is in place, nuclear materials and spent fuel have been stabilized and/or placed in safe long-term storage, and legacy waste has been disposed of in an appropriate manner). Each PBS is required to have a mission complete date.

engineered controls – designed remedial alternatives that inhibit or control the spread of contamination, contain or remediate the contaminated media, or control the infiltration of water at contaminated sites. Examples include pump and treat systems, landfill caps, and lined disposal cells.

excess facilities – facilities no longer needed for mission and/or at the end of their lifecycle use.

institutional controls – legal or administrative means of limiting property access or warning of hazards.

landlord – the Principle Secretarial Office for a site. NNSA is the landlord for LANL, SNL, KCP, and Pantex.

Memorandum of Agreement (MOA) – a written agreement between EM and NNSA describing conditions necessary for transfer of LTES to the site landlord.

Natural Resource Damage Assessment – a calculation of damages to natural resources resulting from a discharge of oil or a release of a hazardous substance covered under CERCLA or the Clean Water Act, in order to recover damages from a responsible party(ies).

Project Closure and Transition Plan (PCT Plan) – the plan developed by the Environmental Restoration (ER) Project to ensure systematic, efficient, and complete ER Project closure. The PCT Plan addresses necessary actions to administratively close-out the ER Project as required to meet RCRA/ Hazardous and Solid Waste Amendments of 1984 (HSWA), Department of Energy (DOE), and site requirements.

physical controls – barriers, fences, engineered controls, locked gates, or patrols employed at PRSs to ensure protection of human health and the environment.

potential release site (PRS) – an area of land impacted by a hazardous substance. For this document, the term includes solid waste management units, areas of concern, operable units, and other specific areas requiring LTES

Site office – Site offices are individual NNSA offices. Those that report to the NNSA Service Center including Los Alamos National Laboratory (LANL), Sandia National Laboratories (SNL), Pantex Plant, and the Kansas City Plant (KCP)

structural controls – physical controls preventing access to or containing a PRS, including berms, fences, gates, walls, and warning signs.

transfer – the change of project management and control of LTES from EM to NNSA, occurring following ER Project closeout.

transition – shift from ER Project efforts to the LTES phase.

Appendix A
Project Closure and Transition Plan Content and Checklists

The PCT Plan should cover the following topics:

1. Authorities and responsibilities – describe EM, NNSA, and regulators' responsibilities, including responsibilities of specific personnel for meeting closure actions.
2. Records management – present records management requirements and procedures for ensuring ER activities are properly documented through site closure. Records document project completion, minimize future legal liability, and guide work during LTES. Records management must comply with National Archives and Records Administration policies and DOE Guidance 1324.5B.
3. Regulatory activities – detail regulatory procedures and requirements for achieving closure of various types of impacted areas. Closure requirements differ for areas of concern closed under the formal RCRA process (e.g., Corrective Action Management Unit), through voluntary corrective actions, or by DOE (radioactively-contaminated only sites). Information should also be provided on permit requirements and status.
4. Disposition of government property – address actions required for ensuring all excess equipment and materials are disposed of in accordance with DOE property disposition regulations and internal site requirements.
5. Financial closeout – detail closeout requirements for subcontracts and permits.
6. Project completion report - document site conditions describing remedies and remaining hazards, results of human health and ecological risk assessments, and performance criteria and limitations.

ER project managers should consistently use a closure checklist and project record checklists for ensuring documentation requirements are met. For example, the SNL/NM ER Project uses the following PCT Plan-related example checklists (or similar variations).

Closure Checklist

Category	Description	✓
Records	Submit all relevant project records to the Records Center. Obtain Closure File printout for discussion with Manager or Task Leader.	—
	Review records listing with Manager or Task Leader (TL) for completeness.	—
	Provide Library with current contact information (telephone number, organization).	—
	Provide designated record owner information to the Records Center.	—
Property	Submit subject property information and recommended reapplication to the Project Manager.	—
	Turn in controlled keys to your secretary.	—
	Return unused office supplies to the pool.	—
	Redirect any property and equipment purchases in your name to the newly assigned individual.	—
Financial	Check purchasing system to determine what contracts you are SDR on, and establish the reassignments through the budget coordinators.	—
	Determine your case manager assignments, and have them reassigned through the budget coordinators.	—
	Close out all reimbursements.	—
PRSs	Meet with your PC Specialist to review status, any outstanding action items related to the baseline (baseline review, etc.).	—
	Review and update all scope documents and their underlying assumptions. Brief to new	—
	Work with your PC Specialist to make all necessary changes to the baseline resource table.	—
	Review and brief the new TL on the baseline resource use, and resource planning, including contracting strategies.	—
	Review and brief the new TL on the regulatory status of each site.	—
	Conduct field tour with new TL to brief the history and status of each site.	—
	Discuss all sources of information and their location to the new TL.	—
	Pass all working copies and electronic files of site information to new TL.	—
	Review and change ownership of the information in the project databases (site tracking, compliance, case managership, lab, etc.).	—
	Meet with field Team Leader and new TL to identify and resolve any transition issues.	
	Meet with lab Team Leader and new TL to identify and resolve any transition issues.	—
General Administrative	Meet with Administration Team for financial and contracting closeout review.	—
Management Review	Meet with individual manager and new TL to review completion of each checklist item.	—
	Review final standing with respect to Transition Plan benefits and arrange for final incentive payoff, if applicable.	—
	Review performance for the applicable portion of the review period.	—

Project Record Checklist

File Category	Record Type	Example
1.0	File Project Records	Programmatic and public interaction Documents.
1.1	Index	Records index created by Records Management
1.2	Contact List	List of personnel and/or contractors most knowledgeable of the file contents and/or most directly responsible for compiling the file.
1.3	Programmatic Documents	Site investigation, cleanup, and closure project management. Historical information and summary documentation of decisions affecting site investigation and/or disposition. • Management plans • Project-level progress reports • Changes in overall scope • Major funding redirections • Programmatic decision documents
1.4	Public Interactions	Public involvement records used in the decision-making process. • Public meetings, Site Specific Advisory Board meetings • Notices to public, state, and local governments
2.0	Technical Basis Records	Records used in determining that no additional site investigation or remediation is necessary.
2.1	Planning Documents	Planning documents that detail site and project closure, and proposed corrective actions taken. HSWA Corrective Action • Project Implementation Plan • RFI Workplan • CMS Plan • VCM Plan • Closure/Post-Closure Plans RCRA Closure • Closure Plan • Post-Closure Plan
2.2	Historical Document Related to Site Conditions	Documents discussing field investigations and supporting conclusions. • Site operating records • Waste Disposal Manifests • Employee/retiree interviews • Incident reports • Aerial photos • Site reconnaissance reports RCRA Closure — Facility Operating Record HSWA Corrective Action — RCRA Facility Assessment
2.3	Technical Data and Reports	Technical data and reports that contain pertinent information on methodologies, results, conclusions, and the associated comment resolution process for documentation. Technical Data and Reports • Sampling and survey results • Raw field and laboratory data • Conceptual models • Risk assessments • Technical conclusions • Technical progress reports • External document review comments/resolution HSWA Corrective Action • RFI Progress Reports • RFI Final Report • CMS Progress Reports • CMS Final Report • Remedy Design • Remedy Implementation Progress Reports • Installation-Wide Hydrogeologic Reports and Updates

File Category	Record Type	Example
2.4	General Procedures	General procedures detailing sampling methodologies, quality assurance, and management of the project. • Sampling and Analysis Plan • Data Collection Quality Assurance Plan • Data Management Plan • Validation, chain of custody, inspection procedures
2.5	Technical Decision Documents	Decision documents that relate to the HSWA Corrective Action process. • No Further Action (NFA) Proposals • RSIs and RSI Responses • Corrective Measure Selection • Regulatory correspondence documentation
2.6	NFA References	All documents, reports, and publications referenced in NFA reports.
3.0	Legal Records	Legal documentation detailing the regulatory, permit requirements, closure certifications, and binding agreements. • Personnel training records • Legal property description • Ownership documents • Lease agreements • Memorandums of agreement for land use • Property transfer documents • Deed restrictions • Easements • Enforcement documents • Compliance agreements • Certifications • Permit modification requests and issuances • Notices of deficiency • References to previous reporting mechanisms (e.g., RCRA 3016 and Federal Facilities Compliance Docket)
4.0	Ongoing Monitoring and Maintenance Records	Records detailing the monitoring and maintenance activities conducted. • Monitoring network description • Sampling and analysis requirements • Results of monitoring • Maintenance requirements and activities • Progress report
5.0	Confidential Records	Records considered confidential due to the privacy act, secured information, technologically sensitive or classified data, and information. • Confidential business records and proprietary technology information • Documents related to personal privacy such as names of interviewees and medical records
6.0	Other Records	All other records addressing issues important to project cost, schedule, scope, and closure.

Appendix B
Minimum Requirements and an Example LTES Plan Outline

Appendix B contains an example outline for LTES plans. **NOTE: Required information is noted in bold,** and must be included in the LTES plans, regardless of the outline used. LTES plans should refer to, rather than duplicate, documents and plans that provide detail, minimizing the need to update more than one document as plans change. LTES plan appendices should be used to provide detail.

1.0 Introduction

Objectives	State the purpose of the LTES and how it should be used.
Scope	Describe physical boundaries addressed by the plan and the breadth of activities it encompasses. Include map(s).
LTES Plan Summary	Summarize key aspects of the LTES Plan. A timeline may be helpful to depict anticipated events.
Limitations/ Assumptions	**Describe limitations and assumptions associated with potential funding, technical, and political issues.**
Authority and History	State authority under which the LTES is written and will be maintained. Summarize how the LTES plan was developed

2.0 Site Description

Background	**Summarize operational history including former occupants and operators, what operations were conducted and when, contaminants that were generated and media affected, and acquisition history.** Summarize remediation history including cleaning up site contaminants and closing, stabilizing, and decontamination and decommissioning (D&D) of onsite facilities.
Physical Setting	Describe relevant geology, hydrogeology, topography, and climate. **Provide the location and characteristics of natural, archaeological, and cultural resources.**
Real Estate	**State the location, legal description, and boundaries.** Describe adjacent ownership, liens, property rights, or other real estate issues associated with the site. Describe current land use and land use agreements.
Affected Community	Describe nearby communities and affected by the site, including employment history, growth, and economic relationship of the site and community.

3.0 LTES Approach

Site Conditions	Describe anticipated conditions at site closure, including units that will have engineering, institutional, and physical controls. **Describe discrete LTES-managed areas, location, and residual and physical hazards**. **State assumptions associated with site end state.**
Land Use	**Describe current and future land use and restrictions.** Describe how the engineered, institutional, and physical controls will affect land use; potential land use changes as engineering controls progress; land uses restrictions; and offsite areas that are directly impacted by LTES activities. Include map(s).
Conceptual Site Model	**Summarize the current understanding of known or potential contamination problems by diagramming the conceptual site model describing relationships between contaminant sources, release mechanisms, exposure pathways and routes, and receptors**.
Engineered, Institutional, and Physical Controls	**Describe each engineered, institutional, and physical control and how it will be being implemented and maintained.** Include anticipated effectiveness of each control, surveillance and maintenance activities, and roles and responsibilities for maintaining the controls. Reference other documents describing controls.

Monitoring	**Describe media to be monitored, frequency,** response thresholds, and integration with the Landlord Site-Wide Monitoring Program.
Risk Management	**Discuss uncertainties associated with LTES and how they are managed,** including factors such as regulatory changes, onsite and offsite land use change, failures in controls, technology effectiveness, changes in ambient subsurface conditions, and changes in facility use.

4.0 LTES Management

Roles and Responsibilities	**Identify groups responsible for LTES site and administrative activities (include document management) and describe their responsibilities. Include regulatory agencies responsible for enforcing LTES activities. Describe the landlord management and LTES management teams.**

5.0 Regulatory Framework and Authorities

Legal Authorities	The legal authorities under which LTES will be conducted should be identified and tied to LTES activities. Refer to documents prepared under those authorities. Include contracts with private parties (e.g., land access agreements). These websites provide information about potentially applicable requirements. State and local requirements should also be researched. http://lts.apps.em.doe.gov/center/reports/pdf/overview_statutes_regs.pdf - Federal http://lts.apps.em.doe.gov/center/reports/pdf/DOE_Orders_Policies_Table.pdf - DOE
Compliance Plan	**Describe regulatory framework considerations (e.g., decision logic and criteria for changes in sampling plans or required reporting).**

6.0 Information Management

Communication Plan	**Describe communication required between LTES managers, site workers, regulators, and the public. Include reporting requirements.** Include or reference a point of contacts list.
Records Management	**Describe electronic and physical records management systems**. Identify records to be managed (e.g., LTES plan [and revisions], sampling and surveillance and maintenance data, audit reports, training records, legal agreements, permits). Identify how and where records will be stored and accessed.

7.0 Health and Safety

Worker Safety	**Describe a health and safety program including health and safety training requirements.** Reference health and safety plan or provide as an appendix.
Public Safety	Refer to access restrictions described in the institutional controls section.
Emergency Response	**Describe emergency response capabilities and arrangements with local, state, and Federal response programs.**

8.0 Quality Assurance

QA Plan	Summarize and reference the LTES Quality Assurance Plan.

9.0 LTES Funding and Scheduling

Funding Sources	**Describe known and anticipated LTES funding source(s) and management.**
Costs	**Provide cost estimates and assumptions.**
Schedule	**Provide schedule for LTES activity start and end dates**, including milestones and anticipated dates**.**

LTES Plan Appendices

The example below provides information may be contained in LTES Plan appendices. Appendices should be used to describe specific remedies or provide information not contained in existing, cited documents.

Example
Site-Wide Groundwater Monitoring System

Description, Goals, and Uncertainties

- Location and Legal Description
- Conceptual Site Model
- Regulatory Framework
- Closure Goals/Contingency Plans/Corrective Actions
- Assumptions and Uncertainties

Land Use Restrictions/Institutional Controls

- Operation and Maintenance
- Surveillance

System Operations

- Sampling
- Well Maintenance
- Data Analysis and Reporting

Cost and Schedule for Site-Wide Groundwater Monitoring

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Appendix C
Memorandum of Agreement Template

MEMORANDUM OF AGREEMENT BETWEEN THE NATIONAL NUCLEAR SAFETY ADMINISTRATION, DEPARTMENT OF ENERGY OFFICE OF ENVIRONMENTAL MANAGEMENT, AND (SITE) FOR TRANSFER OF LONG-TERM ENVIRONMENTAL STEWARDSHIP AUTHORITY AND RESPONSIBILITY FOR (SITE) FROM DOE EM TO NNSA

1. Parties
2. Purpose
3. Authorities
   - Federal, State, and DOE Statutes and Regulations
   - Site-Specific Agreements
4. Background
5. Definitions and Use of Terms
6. Communication and Coordination between DOE EM, NNSA, and (Site)
7. NNSA Responsibility for Long Term Stewardship for (Site)
8. Description of Real Property Covered by the Agreement
9. Exceptions, Limitations, and Conditions to the Agreement
   - Other Limitations or Conditions of the Agreement
10. PART I – Responsibilities of the Parties Prior to Completion of Transfer of Authority and Responsibility for Long Term Stewardship to the Landlord Principal Secretarial Offices (PSOs)
    - Responsibility of Transferring PSO
    - Responsibilities of Accepting PSO
11. PART II – Responsibilities of the Parties After the Completion of Transfer of Authority and Responsibility for Long Term Stewardship to the Landlord PSO
    - Responsibility of Transferring PSO
    - Responsibilities of Accepting PSO
12. Criteria for Completion of Transfer of Authority and Responsibility Under Part II
    - Documentation Requirements
    - Project Management and Funding
    - Compliance with DOE Directives and Authorities
    - Concurrence for Approval of Transfer
13. Conduct of Activities by Transferring PSO After Completion of Transfer
    - Corrective Actions
    - Emergency Response Actions
    - Long Term Environmental Stewardship Activities
14. Information Management and Public Information Systems
15. Reporting, Record Keeping, and Information Management
    - Accepting PSO Responsibilities
    - Transferring PSO Responsibilities
16. Provisions for Reopening the Agreement
    - Criteria for Reopening the Agreement
17. Resolution of Conflicts
18. Effective Date
19. Term of Agreement and Termination
20. Procurement and Funding
21. Signature Blocks

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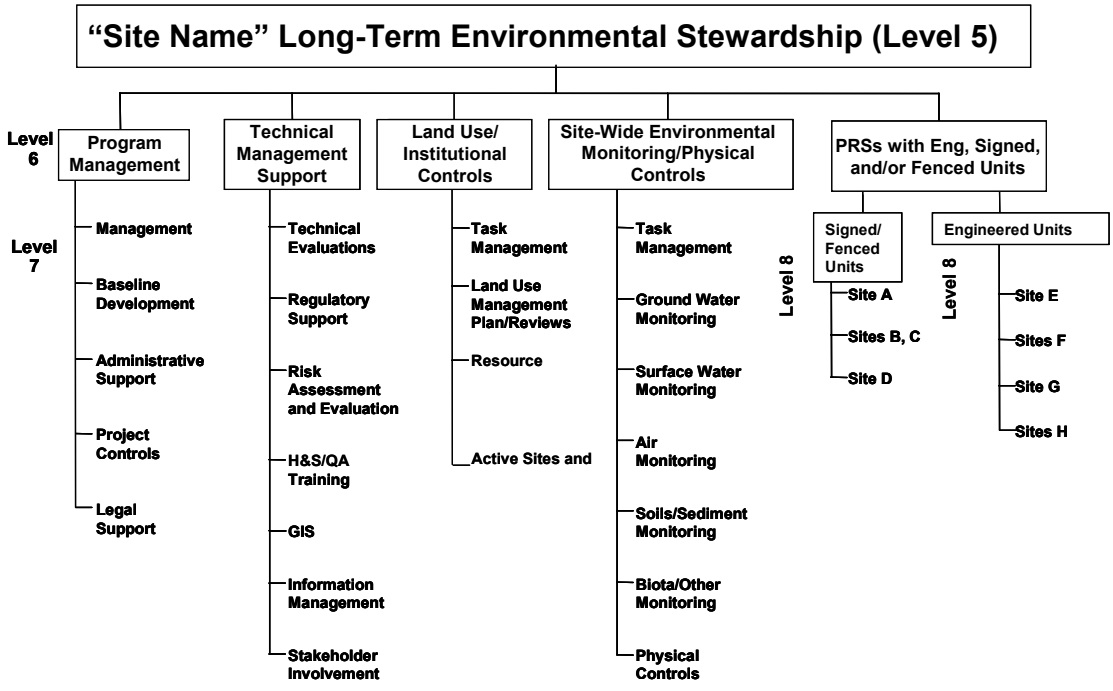
Appendix D
Example WBS Template

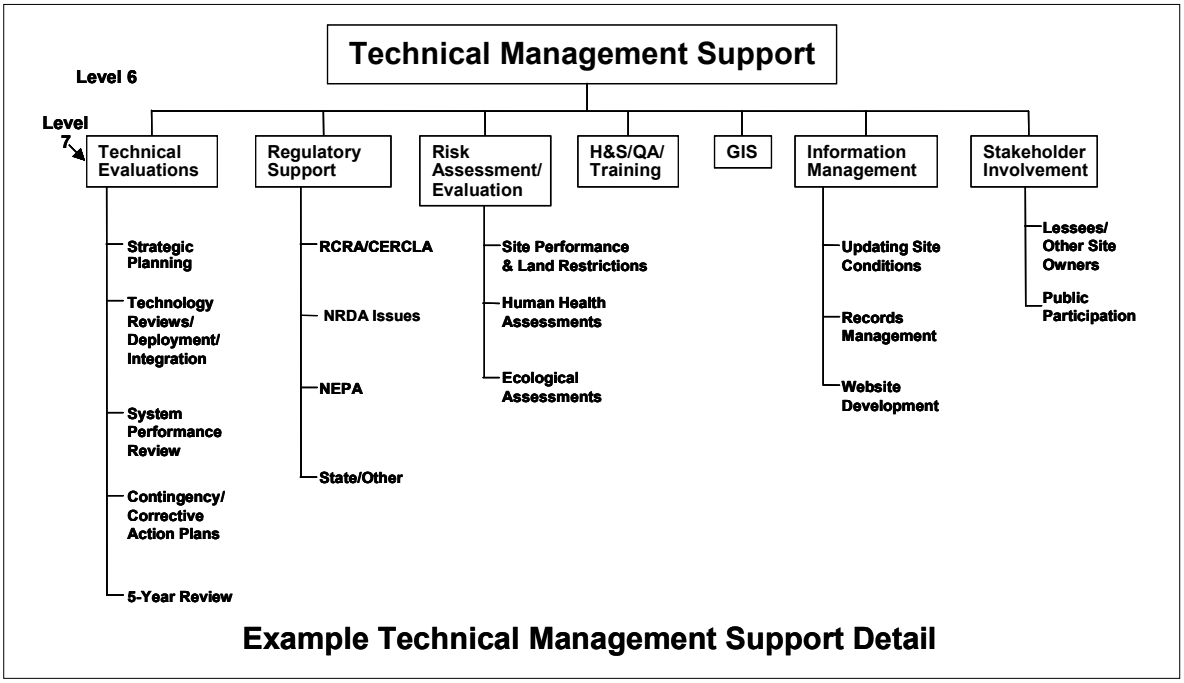
Guide Section	Example WBS Levels and Work Elements
3.1	**Level 5 (**1.4.2.6.4.) **– Site LTES Summary**
3.1.1	**Level 6 – Project Management**
	Level 7 – Management
	Budget
	Personnel
	Reporting (DOE/Landlord*)*
	Level 7 – Baseline Development
	Programmatic Issues
	Scope
	Schedule
	Budget and Cost Estimating
	Level 7 – Administrative Support
	Level 7 – Project Controls
	Level 7 – Legal Support
3.1.2	**Level 6 – Technical and Management Support**
3.1.2.1	Level 7 – Technical Evaluations
	Strategic Planning
	Technology Reviews, Integration, Deployment
	System Performance Reviews
	Contingency and Corrective Action Plans
	Five-Year Reviews
3.1.2.2	Level 7 – Regulatory Support
	RCRA/CERCLA Issues
	NRDA Issues
	NEPA Issues
	State and Other Regulatory Issues and Requirements
3.1.2.3	Level 7 – Risk Assessment and Evaluation
	Site Performance and Land Restrictions
	Human Health Assessments
	Ecological Assessments
	Level 7 – Health and Safety, Quality Assurance, Training
	Level 7 – Geographic Information Systems
3.1.2.4	Level 7 – Information Management
	Updating Site Conditions
	Records Management
	Website Development
3.1.2.5	Level 7 – Stakeholder Involvement
	Communications with Lessees and Other Site Owners
	Public Participation
3.1.3	**Level 6 – Land Use and Institutional Controls**
	Task Management
	Land Use Management Plan and Reviews
	Resource Management
	Active Sites and Surplus Facilities

Guide Section	Example WBS Levels and Work Elements
3.1.4	**Level 6 – Site Wide Environmental Monitoring and Physical Controls** Level 7 - Task Management Level 7 – Ground Water Monitoring Sampling Well Maintenance Structural Controls Maintenance Equipment and Supplies Data Management and Reporting Level 7 – Surface Water Monitoring Sampling Structure Maintenance Structural Controls Maintenance Equipment and Supplies Data Management and Reporting Level 7 – Air Monitoring Sampling Structure Maintenance Structural Controls Maintenance Equipment and Supplies Data Management and Reporting Level 7 – Soils and Sediments Monitoring Sampling Structural Controls Maintenance Equipment and Supplies Data Management and Reporting Level 7 – Biota/Other Monitoring Level 7 – Structures, Engineered Systems, and Physical Controls Sampling Structural Controls Maintenance Equipment and Supplies Data Management and Reporting
3.1.5	**Level 6 – PRSs with Engineered Units and/or Signed and Fenced Units** Level 7 – Signed and Fenced Units Task Management Surveys (i.e., radiation, visual) Sampling Structural Controls Monitoring Equipment and Supplies Data Management and Reporting Level 7 – Engineered Units Level 8 – Example: Landfill with Leachate Collection, Vadose Zone Extraction, and Ground Water Monitoring Level 9 – Leachate Collection System Operation and Maintenance Sampling Structural Controls Monitoring Equipment and Supplies Data Management and Reporting

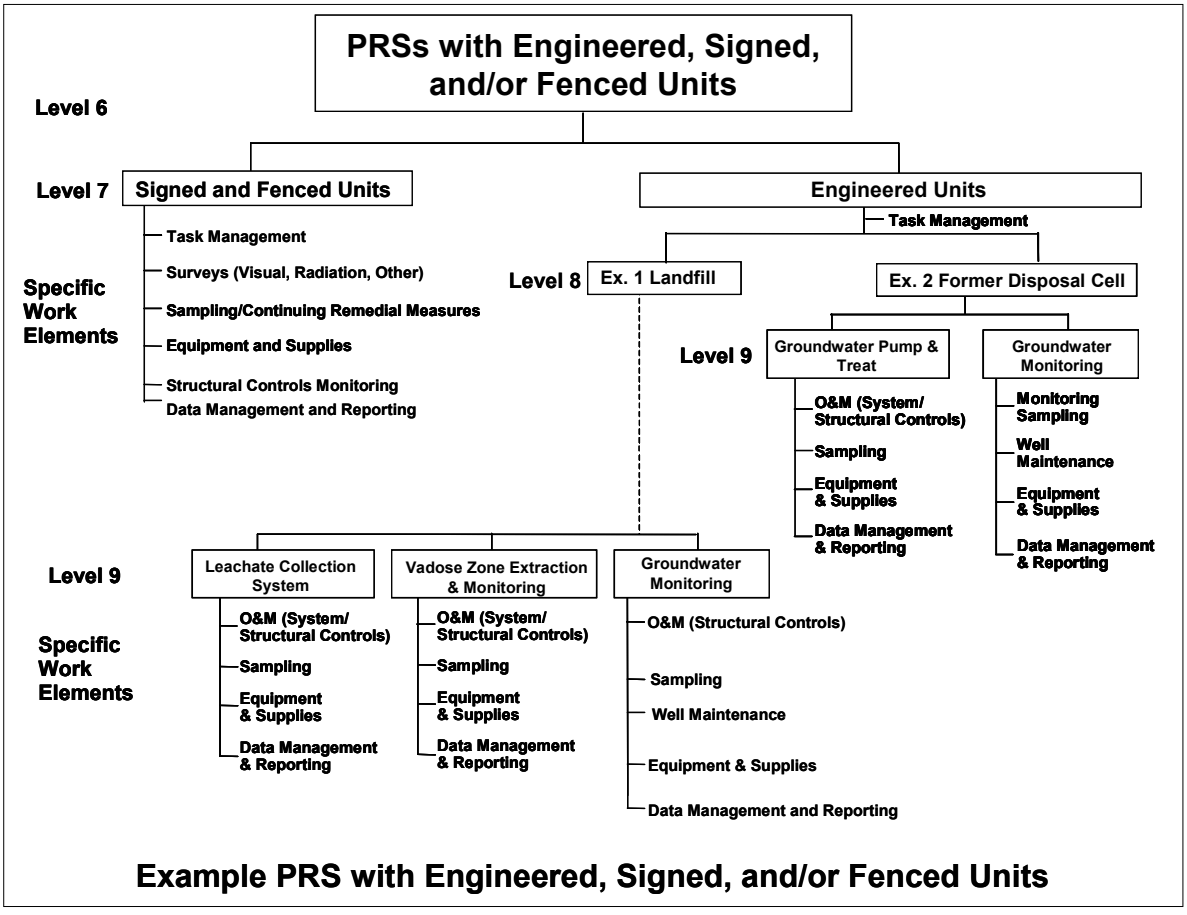
Guide Section	Example WBS Levels and Work Elements
	Level 9 – Vadose Zone Extraction and Monitoring Operation and Maintenance Sampling Structural Controls Monitoring Equipment and Supplies Data Management and Reporting Level 9 – Ground water Monitoring Operation and Maintenance Sampling Structural Controls Monitoring Equipment and Supplies Data Management and Reporting Level 8 – Example: Former Disposal Cell, Ground Water Pump and Treat and Monitoring Level 9 – Ground Water Pump and Treat System Operation and Maintenance Sampling Structural Controls Monitoring Equipment and Supplies Data Management and Reporting Level 9 – Ground Water Monitoring Monitoring Well Maintenance Structural Controls Maintenance Equipment and Supplies Data Management and Reporting



Example LTES Work Breakdown Structure



Example Technical Management Support Detail



Example PRS with Engineered, Signed, and/or Fenced Units

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